MISSOURI BOTANICAL GARDEN

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COVER: *Nyssa sylvatica,* commonly known as Tupelo or Sour Gum, a tree which stands at the southwestern edge of the lake in the North American Tract of the Garden. It becomes the most conspicuous specimen in the Garden in early October when the dark, lustrous green leaves, not unlike those of *Magnolia grandiflora* but smaller and less leathery, change to a brilliant crimson. Tupelo Pool was the name given the lake in a general plan of the Missouri Botanical Garden prepared by the Olmsted Brothers, landscape architects of Brookline, Massachusetts, in 1905. Plants were set out in the North American Tract in the early 1900's according to a synoptical plan following the Bentham and Hooker sequence of families and presumably this tree was planted at that time. Allowing several years for the juvenile stage before being transplanted to its permanent location, it must be almost sixty years old.

Anyone wanting a striking, colorful tree, rivaling a hard maple or a yellow Shagbark Hickory for autumn color, might try a Tupelo. It is well to remember that this tree does best in a moist situation and is difficult to transplant, so should be handled carefully.—Paul A. Kohl (Photo by Paul A. Kohl)

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Missouri Botanical Garden Bulletin

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INEXPENSIVE BEAUTY

W. F. SCOTT, JR.

EACH year a few dollars of the gardener's budget should be set aside for new plants, exciting things to renew enthusiasm and improve judgment. The daffodil collection is sometimes the last to receive this "modernizing," and since this is the time to buy and plant daffodils, let's give them some thought.

New daffodil varieties do not need to be expensive. It is a challenge to seek out the unusual, and yet find it at a low price. We will try to do just that, find varieties which are "new" in the sense that nine out of ten casual daffodil growers do not own them, yet which have been on the market long enough to bring the price below two dollars. And remember—we are looking for ribbon-winners!

Of the yellow trumpet daffodils (class 1a), few can equal KINGSCOURT. It is outstanding, and for ten consecutive years it won "best yellow trumpet in show" at the Royal Horticultural Society (RHS). Nearly its equal, and preferred by some, are CROMARTY and MILANION. You could not go wrong on any of these.

TROUSSEAU is an exquisite bi-color trumpet (class 1b) which has received high honors all over the world. The perianth is pure white. The trumpet opens a soft yellow, which passes to rosy cream. Other good choices in this class are CONTENT and SPITZBERGEN.

From the long list of fine white trumpet daffodils (class 1c), two stand out from all others. They are BROUGHSHANE and CANTATRICE. These should be in every daffodil collection, for they are lovely, and they are ribbon-winners in any show.

Class 1d must be omitted from this search, for it is a new one and contains very few varieties, most of which are exceedingly high priced. These are the reverse bi-color trumpets. If you feel you just must have one, and are willing to pay $3.00 per bulb, SPELLBINDER is your choice. It is a flower which enchants everyone who sees it.

In class 2a (yellow perianth, large colored cup), GOLDEN TORCH is an ideal choice and quite reasonable in price. Class 2b (white perianth, large colored cup) contains two excellent varieties of high quality and low price: COVERACK PERFECTION and RED HACKLE. Buy both if you can; but if a choice must be made, COVERACK PERFECTION might be preferred.

After the shock of the brightly

colored cups found in classes 2a and 2b wears off, you will find lasting satisfaction in the glistening purity of the all-white class 2c. In this class, KILLALOE is a sure ribbon winner, and LUDLOW is close behind.

Class 2d contains one such utterly charming variety that it deserves special mention. This is BINKIE, and it will captivate you immediately. When the flower first opens, it is entirely a most unusual sulphur yellow. The crown soon passes to a lighter shade, which becomes almost white as the flower ages. The flowers, though not of extremely large size, are very well proportioned and perfectly balanced to the stem height. This is a most unusual daffodil.

In class 3a (yellow perianth, small colored cup) there are very few varieties available. CHUNGKING is a sound choice, at a reasonable price. There are no real show-stoppers in this class.

MAHMOUD is your choice for class 3b (white perianth, small colored cup) for it is probably the best of the red-and-white varieties. The almost flat crown is a glowing ruby red, against a snow white perianth. LIMERICK is an excellent second selection.

The last class of large-flowered hybrids is 3c (all white, with small cup) and the outstanding selection here is CUSHENDALL, which has won the Award of Merit of the RHS. The very shallow crown is delicately cream colored on the frilly edge, and the center is a lovely moss green.

Other RHS Daffodil classes include the Doubles, Triandus hybrids, Cyclamineus hybrids, Jonquils, and all the other small and very interesting forms and species. These are for the lovers of the small and unusual, or for the specialist. Some of them do wonderfully well here. Others, like the delicately scented *Jonquilla simplex*, are at the edge of their natural climate and fail to prosper.

All of the large-flowered hybrids we have discussed have been grown in St. Louis several years, and will flourish in this climate. This is an important feature, for some of the large-flowered beauties do not take kindly to our winters, and succumb in one or two years.

Buy a few new things each year, to bring your collection up to date. Otherwise, your judgment of what is good in daffodils suffers considerably. You must have an ever-new standard of comparison. Get only one, or two, but get the best you can afford in the class. The cheapest is almost never an investment. The best nearly always is.

WHERE TO BUY? There are many dealers, and you may have your favorite. Some of our local gardeners may have small quantities of surplus bulbs to sell or trade, and you may save money by asking questions. Of the large growers, Grant E. Mitsch, Canby, Oregon, is the largest domestic breeder and grower of daffodils. He issues a lovely catalog. P. DeJaeger & Sons, South Hamilton, Massachusetts, import bulbs from their nurseries in Holland, and issue a regular catalog. These are the two most important domestic sources and in their catalogs you should be able to locate almost any variety you wish.

NEW PLANT INTRODUCTIONS FOR 1958

THE Garden has received this year some 150 new plants for introduction into the outdoor collections. Of these, the greatest number have come from the United States Department of Agriculture Plant Introduction Station, Glendale, Maryland. The plants were received in the form of seed, cuttings and small plants. Most of them are now growing in cans and in the cold frames awaiting the fall and spring planting season for incorporation into the Garden. A new, over-all landscape design for the entire Garden is being planned. This will first require a mapping-listing of all plants to give a better idea of what is already here and to serve as a guide for replacements and new accessions. Then will follow a revision of existing plantings.

Listed below are some of the more noteworthy plants received.

BARBERRIES—

Berberis aggregata from the Morris Arboretum.

B. fendleri from the Denver Botanic Garden.

B. Diaphana, B. dictyoneura, B. Gilgiana, B. koreana, B. Poireti, and *B. virescens* from the Botanic Garden of Smith College.

B. Thunbergii var. *vermilion* from the U.S.D.A.

DOGWOOD—

Cornus florida "Cherokee Chief" a red variety from Mr. Clarence Barbre of Webster Groves.

HOLLIES—

Ilex hanceana, I. mutchagara, I. rotunda, I. sugeroki, from the U.S. D.A

I. opaca "Fosteri" from Mrs. Martin Lammert III, St. Louis, Missouri.

I. aquifolium "Dumbarton Oaks" from Dumbarton Oaks estate in Washington, D. C.

I. opaca "East Palatka" and the hybrid, *I. cassine* × *I. opaca* "Teas Holly" from Mr. Clarence Barbre.

LEGUMES—

Albizzia Julibrissin, Mimosa Tree, a new strain having very red flowers, from Mr. Thomas C. Crannage of Belleville, Illinois.

Laburnum vossi, Golden Chain Tree, from Mr. Clarence Barbre.

MAHOGANY—

Cedrela odorata, West-Indian- or Spanish-Cedar, from Brisbane Botanic Gardens, Australia. (A relative of the Mahogany tree important to commerce.)

LILY—

Ophiopogon japonicus, Lily-Turf, from Semmes Nurseries, Semmes, Alabama. A ground-cover, the hardiness of which has not yet been proved in this area, now planted in the Mausoleum grounds.

MAHONIAS—

Mahonia lomarifolia from the U.S. D.A.

M. *bealii* from Mr. Clarence Barbre.

M. *pinnata* from Mr. Harvey Templeton of Winchester, Tennessee.

MALLOWS—

Hibiscus Moscheutos "Anne J. Hemming," a large, bright red form of the Rose Mallow, from Eastern Shore Nurseries, Easton, Maryland. This plant is already well established in the Hibiscus collection in the middle knoll of the Garden.

Hibiscus coccineus, a hardy strain, having grown in St. Louis for the past twenty years, with bright red flowers, from Mr. Claude L. Matthews, Ladue, Missouri.

VIBURNUMS—

Viburnum macrocephalum var. *sterile* and *V. judii* from Mr. Harvey Templeton.

—E. L. E.

TREATING BARK WOUNDS BY WRAPPING

THE loss of large sections of bark from tree trunks through automobile collision or other accidents is quite common. The conventional method of treating such wounds consists of cutting away the loosened bark and applying wound dressing materials to the exposed wood. The wound then heals through the formation of callus growth along the edges of the injury; usually this is a long slow process.

An entirely different method of treatment is suggested in a successful experiment made by Andrew T. Leiser of the Department of Floriculture and Ornamental Horticulture, University of California, Los Angeles. In this case, the bark was completely stripped from the trunk of a Chinese elm from the ground upward for a distance of about 4½ feet. Upon discovery some 28 hours after the injury occurred, the loosened bark was removed and the trunk wet down with tap water. Then the injury was wrapped with two layers of polyethylene film. The wrapping was not sealed along the edges, but was tied with cord at the top, middle and bottom. The injury occurred in June; by the following October new bark had formed directly on the sapwood and, with the exception of a few relatively small areas, the wound was covered with this new bark.

The interesting feature of this incident is that new bark developed, not through callus growth along the edges of the wound, but through continued activity of the cambium layer over the sapwood as a result of the protection provided by the polyethylene film. Some cases of similar wound healing have been reported when the injury was shaded either naturally or by burlap screens. When wounds are treated by shading or wrapping, it appears essential that treatment must be made before the cambium layer is killed by the drying effects of long exposure to air.

—Reprinted from the *Shade Tree Digest,* July 1958.

HEDGE APPLES REPELL BUGS

THE hedge apple, the large, green, ball-like fruit of the Osage Orange tree, *Maclura pomifera,* is gaining a reputation as an insect repellant. To quote an *American Nurseryman* writer, "One green fruit, hedge ball, Osage orange, Osage apple or whatever you want to call it, placed in a room

infested with roaches and waterbugs, will drive the creatures out in a few hours," and he further states that such use was discovered by chemists at the University of Alabama.

In recent years there have been a number of reports of the effective use of hedge apples as a roach and waterbug exterminator. Mr. Pring as well as others at the Garden attest that a few hedge apples in the basement and closets have positive results.

Hedge apples drop throughout the fall and winter and the many trees at the Garden usually are quite productive.

THE SILVER NUT TREE, "YIN KOU-TZU"

While it is not generally known, the seed of the Ginkgo when roasted is quite edible. In fact the name Ginkgo comes from the Japanese rendering of the old Chinese name "Yin kou-tzu" meaning silver nut tree. It is also referred to as the white nut tree. The seeds, denuded of their offensive pulp and washed, are a pure white. Roasted "Silver Nuts" are eaten by Orientals at banquets, weddings and other gatherings, being supposed to promote digestion and diminish the effect of wine. They can be found for sale in most market towns in China and Japan. Also you will find them in the Chinatown markets in such cities as San Francisco, Los Angeles and New York. The Ginkgo trees in the Garden or more accurately the female of the species are extraordinarily heavily laden with fruit this season, due, no doubt, to very favorable weather conditions. The branches are so burdened they are breaking with the slightest touch or movement by the wind.

The Ginkgo tree in modern times reportedly is known to occur as a natural forest tree in a single area in China, being usually a tree planted by man for religious purposes or as an ornamental. For this reason the wood is seldom or little used commercially. The wood is white or yellowish-white and is not differentiated into heartwood and sapwood; it is finely grained, quite like White Pine *(Pinus strobus)*; it is easily worked but is of no great value. To a limited degree it is used in Japan as ground work for lacquer ware and for making chess boards and chess men.

The Gingko is first and foremost an ornamental tree of distinct Oriental or patriarchal appearance. While long a revered tree in Oriental Gardens and religious places, it has only in recent years found wide acceptance in Europe and America; the outstanding objection being the foul-smelling fruits borne on the female trees. However, male trees may now be propagated vegetatively for assurance of male trees for planting.

Trees of stately beauty at any time, Ginkgos are especially handsome in the fall, coloring to a rich golden yellow; and when in group plantings as along Flora Place, in the Garden and in nearby Tower Grove Park they are most striking in the autumn landscape.

—E.L.E.

The 1956 systematics symposium participants at the Museum where the fifth annual symposium will be held October 25.
(Photo by Dr. Frederick Meyer)

EUONYMOUS ALATUS, A GOOD SHRUB FOR ST. LOUIS

ONE of the most dependable of shrubs is the Cork-barked or Winged Euonymous, *Euonymous alatus*, which has funny little winged ridges along the sides of the twigs and branches. Whether the summer be wet or dry, the frost early or late, *Euonymous alatus* always colors a deep pinkish red and holds at least some of its bright color long after other shrubs are bare and brown. The Tartarian Maple, by comparison, though more brilliant, holds its leaves only for a few days, frost or no frost, and does not give effective color to the garden for more than a fortnight at the very most. In a protected spot, with *Euonymous alatus* it is frequently almost a month before the very last of the leaves have fallen. Last year, for instance, in spite of several frosts and one or two hard freezes it was bright and attractive during the first week of December.

In general, it is a good all-round shrub for St. Louis. The corky ridges on the twigs make it interesting in the winter landscape. When brought into the house, winter twigs are readily forced into leaf and make unusual table and window sill arrangements for some weeks. It is a shrub that does well in full sun or in light shade, passably well in quite deep shade; and it is readily available from most nurseries. The flowers are greenish and inconspicuous, the fruits, though bright, are small; but the rich deep red of its autumn leaves, year after year, makes it a fine shrub to live with.

—E. A.

FIFTH ANNUAL SYSTEMATICS SYMPOSIUM

THE fifth annual symposium on systematics is to be held at the Garden on October 24 and 25. This symposium brings together botanists and zoologists, principally from the Central United States, to discuss problems of classification and evolution. This year the effects of Man's activities on these fields will be considered. Dr. Edgar Anderson of the Garden and Dr. Robert Usinger, University of California, Berkeley, will serve as chairmen. Following is a list of speakers and the papers they will present for discussion:

Dr. F. R. Fosberg, Pacific Vegetation Project, "Man's Activities as a Dispersal Agent."

Dr. Robert R. Miller, University of Michigan, "Man and the Changing Fish Fauna of the American West."

Dr. H. H. Ross, Illinois Natural History Survey, "The Potential Effects of Man's Activities on the Insects."

Dr. Jonathan Sauer, University of Wisconsin, "Man's Effect on Taxonomic Discontinuities in Plants."

Dr. G. Ledyard Stebbins, University of California, Davis, "Habitat Disturbance by Man as an Accelerating Factor in Plant Evolution."

The Symposium is in part supported by a grant from the National Science Foundation. Last year the meeting was attended by nearly 200 professional biologists and students.

HORTICULTURAL COURSES AT THE GARDEN
1958-1959

Course I—Bulb Forcing
Instructor: Mr. Clarence Barbre

The course consists of one meeting in which instruction will be given in bulb forcing and outdoor bulb culture, followed by a practice period in which each student will plant, in five 7-inch bulb pans, at least 24 top-quality bulbs—tulips, Narcissi (daffodils and paper-whites), and hyacinths. These will be kept in the Garden bulb pit under cold treatment and in the greenhouses until ready to flower (total of 60–80 days). Each student will be notified when to call for the bulbs. This course is intended primarily for those having no previous instruction in bulb forcing.

Five sections are offered:

Section 1, Tuesday, October 14, 7:00–9:30 P. M.

Section 2, Thursday, October 16, 9:00–11:30 A. M.

Section 3, Friday, October 17, 1:00–3:30 P. M.

Section 4, Tuesday, October 21, 9:00–11:30 A. M.

Section 5, Wednesday, October 22, 1:00–3:30 P. M.

Registration: September 8 through October 8. Fee: $8.00.

Course is given in the Experimental Greenhouse, Missouri Botanical Garden (Enter Cleveland Avenue gate, 2221 Tower Grove Avenue).

Course II—Plant Propagation
Instructor: Mr. Clarence Barbre

Again there will be two divisions (A and B) of the Plant Propagation Course. In each division the class will meet twice for a lecture-discussion session followed by a student-practice session. The general objectives of both divisions are the same. Propagation methods, tools, and techniques to conform to the needs of the plant material used will be discussed, thus giving the student understanding and skill in production and care of plants suitable for the home grounds. One plastic-covered propagating box and approximately 40–50 kinds of plants will be provided per student. The lecturer will discuss methods of vegetative propagation: root cuttings, suckers, divisions, hard and soft wood stem cuttings, leaf, bud and scale propagation.

Division A: The student practice will emphasize soft wood propagation of evergreens, principally broad-leaved, such as holly, ivy, azaleas, Euonymous, etc. Some attention will be given to winter care and propagation of house plants.

Four sections are offered:

Section I, Mondays, September 22 and 29, 1:00–3:30 P. M.

Section II, Tuesdays, September 23 and 30, 7:30–10:00 P. M.

Section III, Thursdays, September 25 and October 2, 9:30–12:00 Noon.

Section IV, Fridays, September 26

and October 3, 1:00–3:30 P. M.

Registration: August 18 through September 18.

Division B: The student practice will emphasize propagation of house plants, such as Begonias, Dieffenbachias, Philodendrons, etc. Some attention will also be given hard wood cuttings.

Four sections are offered:

Section I, Mondays, January 12 and 19, 1959, 1:00–3:30 P. M.

Section II, Tuesdays, January 13 and 20, 1959, 7:30–10:00 P. M.

Section III, Thursdays, January 15 and 22, 1959, 9:30–12:00 Noon.

Section IV, Fridays, January 16 and 23, 1959, 1:00–3:30 P. M.

Registration: December 7 through January 7.

Fee: $12.00 each division.

The course is given in the Experimental Greenhouse, Missouri Botanical Garden (Enter Cleveland Avenue gate, 2221 Tower Grove Avenue).

Course III—Spring Horticulture

Instructor: Mr. Clarence Barbre

This is a course in practical spring gardening, the growing of annuals and perennials from seed. Each of the five meetings will include a lecture period in which will be discussed the factors affecting plant growth and the practical means for their control, such as optimum supply of heat, light, moisture, air, fertilizer, the application of lime and mulch and the control of pests and diseases. There will also be a practice period in each day's meeting for which each student will receive seeds and four metal flats with sterilized soil. There will be enough space to grow about 300 to 350 seedlings which, with the flats, will become the property of the students. Seeds of plants particularly desired by any student should be brought to the first meeting.

Four sections are offered:

Section I, Wednesdays, March 18, 25 and April 8, 15 and 22, 1:00–4:00 P. M.

Section II, Fridays, March 20, 27 and April 10, 17 and 24, 9:00 A. M.–12:00 Noon.

Section III, Mondays, March 23, 30 and April 13, 20 and 27, 1:00–4:00 P. M.

Section IV, Tuesdays, March 24, 31 and April 14, 21 and 28, 7:00–10:00 P. M.

Registration: February 13 through March 13.

Fee: $18.00.

The course is given in the Experimental Greenhouse, Missouri Botanical Garden (Enter Cleveland Avenue gate, 2221 Tower Grove Avenue).

Course IV—Growing Orchids in the Home

Instructor: Mr. Robert J. Gillespie

A one-day course of instruction with the following schedule:

10:00 A. M. Discussion of orchids suitable for home culture and the best ways to grow them, with potting demonstration.

12:00 Noon. Lunch time, coffee and soda supplied by the Garden.

1:00 P. M. Unusual containers such as baskets, slabs, poles, etc., for growing orchids in the home, with examples and demonstration of potting and care.

2:00 P. M. Inspection of greenhouses.

3:00 P. M. Individual potting instructions by members of Orchid Department staff. Students may take potted plant home.

Two sections are offered:

Section I, April 18, 1959.

Section II, April 25, 1959.

Fee: $10.00.

Course is given at the Orchid Range, Missouri Botanical Garden, Tower Grove and Flora avenues.

COURSE V—ADVANCED ORCHID GROWING

Instructor: Mr. Robert J. Gillespie

This course for the advanced orchid grower is offered in two divisions (A and B).

DIVISION A: How to Make Orchids Flower. A discussion of how environment influences growth and flowering in the major cultivated genera of the Orchidaceae. Lights and other devices for controlling flowering will be explained. There will be a laboratory session followed by a question and answer period.

Division A meets November 18, 7:00–10:00 P. M.

Division B: Greenhouse Culture of Orchids. Instruction in the fundamentals of growing orchids in the greenhouse. Ventilating, watering, heating, shading, cooling, greenhouse design, automatic equipment, and new construction methods and materials will be discussed and illustrated in the Garden's Orchid Greenhouses.

Division B meets May 2, 1959, 1:00–4:00 P. M.

Both divisions will meet in the Orchid Range, Missouri Botanical Garden, Tower Grove and Flora Avenues.

Fee: $5.00 each division.

"BOTANY EVENING"

THE students in Dr. Anderson's evening classes last April and May have initiated a series of "Botany Evenings" at the Garden, continuing in an informal way their studies of garden plants and wild flowers. The first such evening was held in early June. Two meetings held in September were particularly designed for those who had taken the evening courses in the classification and identification of plants. It is planned to follow them with once-a-month meetings open to all "Friends of the Garden." Visitors are encouraged to bring plants which they would like to have identified or flowering specimens of unusual horticultural and botanical interest to demonstrate to other members.

"Botany Evening" meetings are held in the Museum Building just inside the Cleveland Avenue gate. Announcement of dates of monthly meetings will be made later.

NOTES

THE Garden is proud to welcome Dr. Frits W. Went as its new Director. He is also a Professor of Botany in the Henry Shaw School of Botany at Washington University.

Dr. Went was born in Utrecht, The Netherlands, in 1903. His father, Prof. F. A. F. C. Went, was a Professor of Botany at the University of Utrecht and Director of the Utrecht Botanic Garden. Young Frits, having grown up in such surroundings, had a natural interest in Botany. He was educated at the University of Utrecht and later became a plant physiologist at the Royal Botanic Garden of Buitenzorg in Java.

In 1933 Dr. Went came to the United States and to the California Institute of Technology as an Assistant Professor. Two years later he was promoted to full Professor. At Cal. Tech. he originated the "phytotron," a specially designed air-conditioned greenhouse where moisture, heat, light and other factors in the growth of plants are automatically controlled. He, with several other scientists, discovered the effect of hormones on the growth of plants, thus leading the way to new scientific advances in Horticulture.

While in Southern California, Dr. Went did much to aid in the promotion and establishment of the Los Angeles State and County Arboretum at Arcadia, California. He has contributed much time and energy in all fields of Botanical study and research.

Dr. Went is married and has two children. He is a member of many scientific societies, including the National Academy of Science, and is an honorary doctor of the University of Paris.

A former graduate student at the Garden, Dr. Norton H. Nickerson, is welcomed back as the Garden Morphologist. He is also a member of the faculty of Washington University. Dr. Nickerson received his Ph.D. degree from the Henry Shaw School of Botany in 1953, studying with Dr. Henry N. Andrews, Jr., and Dr. Edgar Anderson.

Since receiving his degree he has taught at the University of Massachusetts and at Cornell University. At Cornell, Dr. Nickerson helped initiate and organize the summer program for teachers given there in 1957, with the support of the National Science Foundation, and in which Dr. Andrews and Dr. Anderson of the Garden staff participated.

As a part of his work this year Dr. Nickerson will help organize adult classes in botany to be given at the Garden.

Dr. Edgar Anderson spent two months this summer on several distinct projects in various parts of the New World. For three weeks he was a guest of the Center for Advanced Studies in the Behavioral Sciences at Palo Alto, California, assisting various social scientists in analyzing their data by his methods, originally developed for measuring differences between

Mexican corn fields. From Palo Alto he flew to the University of Alaska to assist with a National Science Foundation teacher-training course for five days, then to Costa Rica where he attended the 33rd Congresso de Americanistas. From Costa Rica he flew to Colombia where he continued work with the international project concerned with the preservation, classification, and description of the races of corn in the New World.

Dean Henry Andrews has been in Europe all summer on a Guggenheim Fellowship and will remain there during the fall and early winter, studying fossil plants and conferring with European authorities. Ever since he spent part of his student years in Europe, Dean Andrews has been particularly interested in the fossil plants which are found in coal mines. He has become one of the world's outstanding students of the fossils in coal and in rocks associated with it. An increasing number of authorities have been trained under him in the Henry Shaw School of Botany. For him a "field trip" means loading a station wagon with students and simple mining equipment and starting off for a few days in the coal fields of Illinois, Kentucky or Kansas.

In the last few years his work has given him new insights into a much more difficult problem, not the plants of the Age of Coal, but the more primitive plants which preceded them when life evolved out of the seas and onto the land. It is these new ideas which he has taken to Europe with him, ideas not yet developed to the point where he wants to put them all down on paper; ideas rather at the growing stage where he needs to try them out on other experts and particularly on collections of fossil plants in European museums. In letters received at the Garden, he writes enthusiastically about the way his work has been going during the summer and how his ideas have developed under the impact of his studies in European museums.

FALL EVENTS

September

27–28 Dahlia Show, Greater St. Louis Dahlia Society, in Floral Display House.

27–28 Flower Show, Better Garden Clubs of Greater St. Louis, Museum and Shaw House.

October

4–26 House Plants, Old and New, Floral Display House.

11 Veiled Prophet Queen's Reception for School Children, Shaw House.

18 Junior League Show, Floral Display House.

24–25 Fifth Annual Systematics Symposium, Adm. Bldg. and Museum.

29–30 Indian Art Exhibit, 8th. Dist., Mo. Federated Women's Clubs, Museum.

November

8–30 Chrysanthemum Show, Floral Display House.

December

1–7 Chrysanthemum Show, continued.

14–31 Poinsettia Display, Floral Display House.

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Oscar E. Glaessner.....Controller
Paul A. Kohl.....Floriculturist
Emmet J. Layton.....Landscape Architect
Viktor Muehlenbachs.....Research Associate
Norton H. Nickerson.....Morphologist
Kenneth O. Peck.....In charge of Visitors' Activities
Isabella T. Powell.....Friends of the Garden Secretary
George H. Pring.....Superintendent
Kenneth A. Smith.....Engineer
Julian A. Steyermark.....Research Associate
Frank Steinberg.....Superintendent of the Arboretum, Gray Summit
George B. Van Schaack.....Librarian and Curator of Grasses
Trifon von Schrenk.....Associate Curator of the Museum
Robert E. Woodson, Jr.....Curator of Herbarium

SOME FACTS ABOUT SHAW'S GARDEN

The Missouri Botanical Garden (the official name chosen by Mr. Shaw) carries on the garden established by Henry Shaw over a century ago at TOWER GROVE, his country home. It is a private institution and has no support from city or state. The old stone walls and cast-iron fences, the Linnaean House, the Museum, the Mausoleum, and the TOWER GROVE mansion all date from Mr. Shaw's time. Since his death, as directed in his will, the Garden has been in the hands of a Board of Trustees who appoint the Director.

The Garden is open every day in the year (except New Year's and Christmas) from nine A. M. until seven P. M. spring to fall and until six in the winter time though the greenhouses close at five. TOWER GROVE, itself, Mr. Shaw's old country home, is open from one until four, admission twenty-five cents, with special guides. The Garden is nearly a mile long and has several entrances. The Main Entrance, the one most used by the general public, is at Tower Grove and Flora Place on the Sarah bus line (No. 42). The Park Southhampton buses (No. 80), direct from downtown, pass within three blocks of this entrance and stop directly across the street from the Administration Building at 2315 Tower Grove Avenue. The latter is the best entrance for students, visiting scientists, etc. It is open to such visitors after 8:30 A. M., but is closed on Saturdays, Sundays, and holidays. The step-in gate (more or less concealed by the big Cleveland Ave. gate, 2221 Tower Grove) is nearly always open, and there is a service entrance on Alfred Avenue, one block south of Shaw Avenue.

Since Mr. Shaw's time an Arboretum has been developed at Gray Summit, Mo., adjacent to State Highways 50 and 66. It is open every day in the year and has auto roads as well as foot trails through the wild-flower reservation. There is a pinetum and an extensive display of daffodils and other narcissi which are at their best in April.